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January 5, 2015

Mr. Peter Ramanauskas
U.S. EPA Region 5
77 West Jackson Boulevard
Mail Code LU-9j
Chicago, IL 60604-3507

Re: PCB Remediation Plan, Scioto Hall, University of Cincinnati

Dear Mr. Ramanauskas

This letter has been prepared by the University of Cincinnati to transmit a Remediation plan in accordance with the requirements for a risk-based cleanup and disposal request per 40 CFR 761.61©. This plan details the proposed remedial plans for the assumed polychlorinated biphenyl (PCB bulk product waste (original caulking) and assumed PCB remediation waste (impacted building materials and certain adjacent surfaces) at the North Residential Area, Scioto Hall, on the University of Cincinnati campus in Cincinnati, Ohio. The same remedial activities and methods that were approved and resulted in a successful remediation of Morgens Hall will be applied to Scioto Hall.

This work is being conducted as part of a larger revitalization project within Scioto hall. The remedial activities associated with the assumed PCB impacted glass and aluminum wall paneling are also conducted as bulk PCB remediation Waste. If required once the plan is approved notification will be submitted to the Ohio EPA and the Hamilton County Board of Health.

If you have any questions, comments or require further information, please contact me at 513-556-4979.

Sincerely

A handwritten signature in blue ink, appearing to read 'Jan Utrecht', is written over the typed name.

Mr. Jan Utrecht, M.S.
Director, Environmental Health and Safety
University of Cincinnati

Cc: Jack Schnieder, Project Manager

REMOVAL PROCEDURE FOR ASBESTOS & PCB-CONTAINING CAULK

**In Association with the Renovation of Scioto hall
University of Cincinnati
2921 Scioto Street
Cincinnati, Ohio**

Prepared for

**University of Cincinnati
51 Goodman Drive
P.O. Box 21-186
Cincinnati, Ohio 45221-0186**

Prepared by

**Office of Environmental Health and Safety
University of Cincinnati
Cincinnati, Ohio 45221**

January 5, 2014

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- Summer 2014 Indoor Surface Sampling Results, Morgens Hall, University of Cincinnati, Cincinnati, Ohio
- Summer 2014 Indoor Air Sampling Results, Morgens Hall, University of Cincinnati, Cincinnati, Ohio

**Removal Procedure for
Asbestos & PCB-Containing Caulk
In Association with Renovation of Scioto Hall
University of Cincinnati
Cincinnati, Ohio**

1.0 Introduction

The Scioto Hall is a vacant dorm/living facility. Scioto Hall was part of a complex that included Morgens Hall built at the same time using the same building materials. As a result the exterior caulk in Scioto Hall is assumed to contain greater than 50 ppm polychlorinated biphenyls (PCBs). Caulk material on the inside and outside of exterior walls of the Scioto Hall facility, on the University of Cincinnati campus and located at University Avenue and Scioto Street in Cincinnati, Ohio, shall be assumed to contain both asbestos and PCBs.

The Scioto Hall dormitory was constructed in 1965 on the Uptown West Campus of the University of Cincinnati. The structure is a 14-story concrete frame. The site is bordered by Morgens Hall dormitory on the north, Scioto St. on the east, open space to the south and Campus Green open space to the west. The site is 1 acre in size. The main public road is 176 feet away from the building. To the east there exists a parking garage with 80 feet of separation and to the north; Morgens Hall is also separated by 80 feet. The building has only been used as a dormitory and contains 168 separate units of varying size to accommodate 560 students. The floor plan is exactly the same as Morgens Halls.

Planned renovation for modernizing and updating the units within Scioto Hall necessitates the removal of various materials, including the caulk on the exterior walls. The caulk material is in flexible and malleable condition and would be considered in good condition and in a "non-friable" state relative to the asbestos characterization. Caulk material exists in vertical and horizontal runs at joints on the exterior, interior, and within certain areas of the curtain wall that comprises the exterior wall system. For the curtain wall, caulk was applied at an interface between an aluminum frame and concrete structure. For this project, there will be no salvage of materials.

2.0 Sampling of the Concrete

There is no plan to sample the concrete in Scioto Hall. The type of concrete construction in Scioto Hall is the same as Morgens Halls. The procedures and methods that were successfully developed for Morgens will be applied used on the surfaces in Scioto Hall.

3.0 Soil Sampling

The ground and exposed soil areas around Scioto Hall will be protected with polyethylene sheeting. After removal of the regulated materials from Scioto Hall the grassy and exposed soil areas proximal to the building will assessed to determine the PCB concentration existing in the soils. This assessment to determine next action steps based upon 40 CFR 761 or EPA guidance documentation associated with PCB caulk.

4.0 General Requirements

- 4.1 Prior to initiating work on the curtain wall systems, interior surfaces, and exterior surfaces or any surfaces that would disturb the caulk, each unit shall have erected critical barriers and protected floor surfaces with at least two layers of 6 mil polyethylene sheeting. In addition, all other requirements for the abatement of non-friable asbestos-containing materials shall be employed as identified in a Specification Document.
- 4.2 Properly equipped and trained personnel will perform the removal of the caulk material. The contractor will use manual removal methods to remove caulk material as much as practicable. Caulk material shall be collected and placed in a waste container. The PCB waste will be placed in drums or other suitable containers and temporarily stored on site in a secured location, until disposed of through the University's Office of Environmental Health and Safety. The aluminum associated with the curtain wall system will be handled and disposed of as PC-contaminated waste. The transporter will provide the appropriate documentation and waste manifests for handling, transporting and disposing of PCB Bulk Product waste and PCB Remediation waste. The Contractor shall submit the following to the Architect prior to initiation of removal work.
- a. Work Plan: Attached is the Work Plan describing the methods to be used for removal and containment of caulk, protection of workers, and prevention of PCB/asbestos contamination from migrating from the work areas.
 - b. Health and Safety Plan (HASP): Attached is the site specific Health and Safety Plan developed for the expected work and site conditions. The HASP lists the roles and responsibilities of the site health and safety officer, supervisors and other key personnel
 - c. Training Documentation: Documentation of OSHA 40-hour HAZWOPER Training for employees and subcontractors to be used for the PCB abatement work. Additionally, asbestos worker documentation must be provided for abatement of the caulk.
 - d. Material Safety Data Sheets will be provided for any chemicals and materials that will be used during the project.
- 4.3 PCB Disposal Plan: All PCB/asbestos waste shall be disposed of through the University's Office of Environmental Health and Safety. The University's Maintenance Hazardous/Chemical Waste Disposal Contractor will provide the required labeling, packaging, transportation, manifesting, etc. during the project for the PCB/asbestos waste. All documentation, manifests, receipts, etc. will be maintained by the University's Office of Environmental Health and Safety.

5.0 Establishing the Work Area

3.1 The work areas will be clearly identified by use of fencing, isolation barriers, signage, or other means. In accordance with asbestos requirements, the area will be "Regulated Area" and is similarly laid out by zones, as those for hazardous materials. Access to the work area by equipment, personnel and the public will be limited as indicated below:

- a. Abatement Zone – The Abatement Zone(s) are those areas where active abatement or waste handling and staging activities are being undertaken. The abatement zone will be isolated by critical barriers serving for both asbestos and PCB contamination control. Access will be restricted to all personnel, except those necessary to complete the abatement work and who are wearing the proper personal protective equipment. Abatement Zone(s) can be relocated as necessary to complete the removal of PCB-containing caulk from the Scioto Hall.

Note: Asbestos abatement activities for the removal of the caulk will follow OSHA Class II removal procedures. Work will be performed in accordance with local, state and federal regulations regarding asbestos abatement. The engineering controls, administrative controls, and personal protective equipment required for the asbestos aspect of the project will also be protective for the PCB aspect of the project as well. In addition, workers shall also wear gloves protective against exposure to the PCB caulk.

- b. Decontamination Zone – The Decontamination Zone is the zone between the Abatement Zone and the Support Zone. The Decontamination Zone acts as the buffer area and is useful in preventing the spread of contamination out of the Abatement Zone. Decontamination of personnel, equipment, containerized waste, and other materials occurs in this zone, accomplished by the use of a decontamination enclosure system. Personal protective equipment (PPE) and exterior clothing shall be removed or decontaminated prior to exiting into the Support Zone. This zone shall be demarcated using signs and/or labels to clearly identify this zone and will require the wearing of PPE prior to entering into this zone from the Support Zone.
- c. Support Zone – The Support Zone consists of the remainder of the work site outside of the Decontamination Zone. Administrative and other functions not necessary to be carried out inside of the Abatement and Decontamination Zones are performed in this zone.

6.0 Worker Protection

6.1 A site specific Health and Safety Plan (HASP) was developed by the Contractor prior to the initiation of work. Persons involved with this work shall have read and/or have had training that properly informs workers about the health and safety issues associated with this project. The on-site Health and Safety Officer is responsible to verify and enforce health and safety requirements.

- 6.2 Personal protective equipment for personnel conducting the removal of the caulk will include at a minimum, half-face negative pressure, air purifying respirators equipped with organic vapor high efficiency particulate air (HEPA) combination cartridge filters (P-100) along with full body suit, eye protection, foot protection and appropriate gloves. A hard hat is required in any area where the worker may be struck on the head by an object or component. A HEPA –filtered vacuum, with suction placed as close to the source as possible, will also be used during the cutting of the caulk material. Personal air sampling will be collected for three different shifts to determine worker exposure and PCB and asbestos concentration levels. A Certified Industrial Hygienist will assess the sample results to determine appropriate actions going forward.
- 6.3 Personnel existing the established regulated work area (Abatement Zone) must undergo proper decontamination procedures as identified in the Specification document. Suits, gloves, and other disposable materials will be collected in appropriate PCB waste containers. These containers will be temporarily stored on-site and handled as a contaminated waste. The containers will be temporarily stored on-site and handled as contaminated waste.

7.0 Caulk Removal and Concrete Sealing

- 7.1 Prior to initiation of caulk abatement at each work area, verification of a containment system shall be conducted. If a containment system is not established, one shall be constructed by the contractor to capture and contain the materials removed during the abatement.
- 7.2 Two layers of polyethylene sheeting with a minimum thickness of 6 mil will be placed on the floor at the curtain wall and extending inward a minimum of five feet and secured with duct tape or other material approved by the Architect.
- 7.3 Two layers of polyethylene sheeting with a minimum thickness of 6 mil will be placed on the balcony floor on the exterior at the curtain wall and extending outward to cover the flooring area and secured with duct tape or other material approved by the Architect.
- 7.4 Work shall not commence if wind speeds are in excess of 20 miles per hour, unless an adequate containment with appropriate support bracing is constructed to fully enclose the work area.
- 7.5 Caulk seals and caulk residue in joints on the interior and exterior of the exterior all shall be removed using manual methods. The caulk waste will be collected by the contractor and then stored on-site by the University of Cincinnati until disposal through the Office of environmental Health and Safety. At no time shall caulk or related debris be permitted to extend beyond the covered surfaces within the containment area.
- 7.6 The Contractor shall carefully disassemble the curtain wall. Materials not in contact with the caulk may be segregated and later disposed of separately as a non-hazardous waste. However as the curtain wall is disassembled, remove and collect the caulk and residue from the surfaces. The caulk and residue will be stored as indicated in Article

7.5. The aluminum materials in contact with the caulk material will be handled and disposed of as PCB Bulk Remediation waste.

The surface of the concrete (2.5" wide), which had been in contact with the caulk, shall be misted with water, and then cleaned by razor scraping tool, steel wool, bristle brush, cloths, or combination of these. All materials used for cleaning shall be decontaminated or disposed of as PCB-contaminated waste. A HEPA vacuum shall be used regularly during the cleaning process.

- 7.7 A cleaning shall be performed using HEPA vacuums and wet wipes over the containment surfaces.
- 7.8 The contractor shall carefully remove the first layer of polyethylene sheeting containment system in such a way as to prevent release of any captured caulk or caulk debris. The containment materials shall be immediately placed in a suitable PCB waste container.
- 7.9 Following removal of all visible caulk and caulk residue from the exposed concrete surfaces, the concrete surfaces will be treated with CAPSUR® PCB extraction solution according to the manufacturer's specifications. After inspection the concrete shall be sealed with a minimum of two (2) layers of solvent resistant and water repellant coating. Each layer shall be allowed to fully dry between applications and prior to build back of the new exterior floor or wall system. The sealer shall be a Siloxane WB concentrates or approved equal and shall be of contrasting color.
- 7.10 The Contractor will repeat the process and remove the second layer of sheeting and containerizing as in Article 7.9.
- 7.11 During the caulk abatement process for the building, waste materials shall be containerized and transported to the on-site storage location on the ground floor. Drums and containers shall be properly labeled and secured.

8.0 Record Maintenance Program

- 8.1 The University of Cincinnati shall make permanent record that indicate specific areas of the structure where assumed PCB containing caulk had been abated and where soil sampling will be conducted.

9.0 On-site waste Storage

- 9.1 The Contractor shall containerize the abatement waste materials within the Abatement Zone. The Contractor shall decontaminate the exterior of the waste receptacle in the Decontamination Zone and transport the materials within the building to the waste staging /storage area. The Contractor shall be responsible for these areas until abatement work is complete and responsibility will then shift to the University of Cincinnati's Office of Environmental Health and Safety.

- 9.2 All waste containers must be labeled with the name of the waste contained; the date in which the first material was placed in the vessel; and the last date in which addition of waste occurred.
- 9.3 Waste containers with caulk or caulk debris, containment system materials, used PPE, or other wastes generated during the abatement work shall be labeled in accordance with state and federal regulations.

10.0 Waste Transportation and Disposal

- 10.1 The University of Cincinnati's Office of Environmental Health and safety shall be responsible for the off-site transportation and disposal of the waste material. The transportation and disposal shall be in compliance with applicable local, state, and federal regulations.
- 10.2 Typical manifest documents shall be used for shipment of this hazardous waste.
- 10.3 Tipping receipts shall be obtained and retained by the University of Cincinnati.
- 10.4 The University of Cincinnati shall obtain and retain Certification of Final Treatment/Disposal from the disposal facility, signed by the facility official. All disposal documentation will be retained in the University's Office of Environmental Health and Safety.

11.0 Limitations

This procedure was developed to assist the University of Cincinnati in identifying actions to properly handle, remove, store, transport, and dispose of asbestos and PCB-containing caulk at the above referenced site. In addition to the Plan for the Removal of Building Related Polychlorinated Biphenyl (PCBs) and the Site Specific Health and Safety Plan the following documentation is included:

- Results of PCB Mitigation Pilot Testing, Morgens Hall, University of Cincinnati
- Winter 2014 Indoor Surface Sampling Results, Morgens Hall, University of Cincinnati, Cincinnati, Ohio
- Winter 2014 Indoor Air Sampling Results, Morgens Hall, University of Cincinnati, Cincinnati, Ohio
- Summer 2014 Indoor Surface Sampling Results, Morgens Hall, University of Cincinnati, Cincinnati, Ohio
- Summer 2014 Indoor Air Sampling Results, Morgens Hall, University of Cincinnati, Cincinnati, Ohio

APPENDIX



Plan for the Removal of Building Related Polychlorinated Biphenyls (PCBs)

University of Cincinnati
Scioto Hall

Prepared by:

NorthStar Demolition & Remediation

December 9, 2014

1) Introduction

NorthStar Demolition & Remediation, LP shall perform the remediation of the specified PCB-containing materials in accordance with this "Plan for the Removal of Building-Related Polychlorinated Biphenyls (PCBs)", prepared by NorthStar Demolition & Remediation and dated 9th of December 2014. NorthStar will perform the Polychlorinated Biphenyls (PCB) activities in accordance all applicable local, state, and federal regulations governing PCB's within an occupational setting and understanding that unauthorized PCBs have been found in specified caulking compounds and specified associated material. NorthStar has submitted this plan and shall perform the following work activities.

2) Scope of work

The project involves the proper handling, removal and on-site temporary storage of PCB containing caulk and adjacent contaminated building material. The PCB containing caulk (approximately 13,000 lineal feet), windows and curtainwalls on all exterior elevations (approximately 41,000 square feet) and brick façade on North and South elevations (approximately 12,000 square feet) is located throughout the existing curtain wall/façade system. Refer to the Project Drawings/Specifications/Hazardous Material Surveys for more specific detail.

3) Work area preparation

- Prior to initiating any of the remedial activities, the following controls will be implemented:
 - A Health & Safety Plan will be developed for specific work activities to be conducted.



- Additional notifications and plans required for the work activities will also be prepared and submitted for approval, as needed.
- Access to work areas will be limited to workers associated with the abatement project. Access to the active work area will be restricted by signage with controlled access.
- Fully equipped three stage remote decontamination units will be erected for personal hygiene.

4) Regulated area controls

- Engineering controls will be used to minimize fugitive emissions from the project to protect workers, the public, and the environment.
 - To reduce particulate levels and exposures to airborne particulates, a combination of engineering controls (e.g. wetting, HEPA attached tools...) and personal protective equipment (PPE) will be implemented as part of the work activities.
 - Ground cover (polyethylene sheeting or equivalent) will be placed along building walls and attached to the building as containment for any debris or building materials removed.
 - The immediate work area will be cordoned off with "Danger Tape" and the appropriate PCB and Asbestos signage will be posted.
 - Access to the work areas will be limited to workers associated with the abatement project.

5) Standard Operating Procedures

- Caulking removal
 - Confirm Fall Hazard Written Plan Confirm Fall Hazard Written Plan has been approved by NorthStar Corporate Safety Director.
 - Workers will wear appropriate Tyvek garments, (suits with hoods, booties, etc.), nitrile gloves, and negative pressure full-face respiratory protection equipped with P-100/OV filters during all phases of the removal process.
 - Inspect all lift equipment, Tie Offs, harnesses and fall protection equipment prior to using.
 - Work surfaces will be misted to minimize dust during removal operations using hand sprayers.
 - Workers will use only hand/power tools to remove the caulking material.



- Care will be taken to not unduly disturb/further contaminate PCB and asbestos containing caulk and associated contaminated building materials during demolition/dismantlement. The prescribed polyethylene sheeting/mast climbing work platforms will catch errant demolition debris (i.e broken glass, metal clips, etc.) generated during the removal work.
- A HEPA vacuum (with the suction placed as close to the source as possible) will be used during any manual removal/cutting of impacted materials and for clean up/decontamination purposes.
- Upon completion of the removal activities, the resultant concrete surfaces will be treated with CAPSUR PCB extraction solution.
- A third party visual inspection will be conducted. Any surfaces that do not meet the visual clearance criteria will be re-cleaned.
- Northstar will apply two layers of epoxy based encapsulating sealants (Sikagard-62) to the concrete where caulk residue may exist to prevent migration of PCB's. Refer to the attached technical data/specifications for additional information regarding the CAPSUR and Sikagard-62 products. Both products will be applied/used in accordance with their respective manufacturer recommendations.
- Workers will decontaminate their personal protective equipment utilizing alcohol wipes / CAPSUR PCB Extraction Solution (double-wash / rinse procedure) and dispose of contaminated wastes and Tyvek garments at the decon station.
- A wipe test will be performed by an independent consultant.
- All waste generated during the caulking removal process will be disposed of as Mixed PCB Bulk Remediation and Asbestos Containing Waste. Waste will be properly manifested and legally disposed of. This is to be coordinated directly by the Owner/Designated Owners Representative(s).
- The Waste Hauler is also to be determined by the Owner/Designated Owners Representative(s).

➤ Window & Curtainwall Removal

- Confirm Fall Hazard Written Plan has been approved by NorthStar Corporate Safety Director.
- Workers will wear appropriate Tyvek garments, (suits with hoods, booties, etc.), nitrile gloves, and negative pressure full-face respiratory protection equipped with P-100/OV filters during all phases of the removal process.



- Inspect all lift equipment, Tie Offs, harnesses and fall protection equipment prior to using.
- The window and Curtainwall fasteners will be exposed and cut loose in a controlled manner.
- Utilizing a Brokk 180 with shear attachment to size Curtainwall where it continues at floor levels where applicable.
- Utilize a Brokk 180 with shear attachment to size window frames to manageable pieces to bring inside the building.
- A HEPA vacuum (with the suction placed as close to the source as possible) will be used during any manual removal/cutting of impacted materials and for clean up/decontamination purposes.
- Wrap contaminated window components in two layers of 6 mil poly and disposed of as PCB contaminated waste by the owner.
- Upon completion of the removal activities, the resultant concrete surfaces will be treated with CAPSUR PCB extraction solution.
- A third party visual inspection will be conducted. Any surfaces that do not meet the visual clearance criteria will be re-cleaned.
- Northstar will apply two layers of epoxy based encapsulating sealants (Sikagard-62) to the concrete where caulk residue may exist to prevent migration of PCB's. Refer to the attached technical data/specifications for additional information regarding the CAPSUR and Sikagard-62 products. Both products will be applied/used in accordance with their respective manufacturer recommendations.
- Workers will decontaminate their personal protective equipment utilizing alcohol wipes / CAPSUR PCB Extraction Solution (double-wash / rinse procedure) and dispose of contaminated wastes and Tyvek garments at the decon station.
- All waste generated during the caulking removal process will be disposed of as Mixed PCB Bulk Remediation and Asbestos Containing Waste. Waste will be properly manifested and legally disposed of. This is to be coordinated directly by the Owner/Designated Owners Representative(s).
- The Waste Hauler is also to be determined by the Owner/Designated Owners Representative(s).



➤ Exterior Brick Removal

- Confirm Fall Hazard Written Plan has been approved by NorthStar Corporate Safety Director.
- Workers will wear appropriate Tyvek garments, (suits with hoods, booties, etc.), nitrile gloves, and negative pressure full-face respiratory protection equipped with P-100/OV filters during all phases of the removal process.
- Inspect all lift equipment, harnesses and fall protection equipment prior to using.
- Remove brick infill from top down, bringing material into the building.
- Demolition will be completed using hand/power tools to ensure that all work is done in a controlled manner.
- A HEPA vacuum (with the suction placed as close to the source as possible) will be used during any manual removal/cutting of impacted materials and for clean up/decontamination purposes. All brick will be packaged as PCB contaminated waste for disposal by the owner.
- Upon completion of the removal activities, the resultant concrete surfaces will be treated with CAPSUR PCB extraction solution.
- A third party visual inspection will be conducted. Any surfaces that do not meet the visual clearance criteria will be re-cleaned.
- Northstar will apply two layers of epoxy based encapsulating sealants (Sikagard-62) to the concrete where caulk residue may exist to prevent migration of PCB's. Refer to the attached technical data/specifications for additional information regarding the CAPSUR and Sikagard-62 products. Both products will be applied/used in accordance with their respective manufacturer recommendations.
- Workers will decontaminate their personal protective equipment utilizing alcohol wipes / CAPSUR PCB Extraction Solution (double-wash / rinse procedure) and dispose of contaminated wastes and Tyvek garments at the decon station.
- Waste associated with the brick removal process will be separated as PCB Bulk Material (no less than one course of adjacent brick) and C & D (remainder). Waste will be properly manifested and legally disposed of. This is to be coordinated directly by the Owner/Designated Owners Representative(s).
- The Waste Hauler is also to be determined by the Owner/Designated Owners Representative(s).



6) Sampling

- NorthStar will conduct the required OSHA sampling for worker protection.
- Owner will perform 3rd Party wipe sampling.

7) PCB waste containers

- All PCB waste generated during the PCB remediation activities, including PPE, poly sheeting, and PCB-containing materials and contaminated debris will be disposed of as PCB remediation waste or Mixed PCB and Asbestos Containing Material Waste. All PCB waste is to be properly manifested and legally disposed of and is to be coordinated directly by the Owner/Designated Owners Representative(s). The owner's representative must sign for the disposal of the waste material when picked up by the waste transporter. Appropriate copies of all waste manifests will be kept by the owner for record-keeping purposes and confirmation of proper disposal.
- All building materials with residual concentrations of PCBs ranging from 1-50 ppm subsequent to decontamination will be disposed as demolition waste in a permitted C&D landfill.
- No liquid waste will be generated. We will be utilizing alcohol wipes, CAPSUR PCB Extraction Solution on rags, and the water mist will only be utilized during caulking removal.

8) Training and Certification

- A Supervisors with 40 Hour Hazardous Waste Operations Training and applicable asbestos Supervisor training and certifications will oversee all work. All workers will have at a minimum PCB awareness and Asbestos Worker certification and be instructed on the appropriate job/task specific safety protocol. In addition to the appropriate training, an initial negative exposure assessment will be performed by a third party consultant immediately upon commencement of physical demolition work. The negative exposure assessment will be used to verify actual OSHA exposure levels experienced during performance of work, and prescribed the appropriate follow-up task-specific PPE to be utilized on the project. Where deemed appropriate, results from previous monitoring data indicating exposure levels likely to be encountered
- Occupational exposure to PCB's and the unique hazards associated with this operation will be an ongoing topic of daily toolbox talks and jobsite safety meetings throughout the course of this project.

CAPSUR.®

PCB EXTRACTION SYSTEM

CAPSUR is a patented, aqueous-based solvent system developed specifically for the extraction of Polychlorinated Biphenyl (PCB) from surfaces. CAPSUR has the capability of being applied as a foam which allows application to overhead, vertical and horizontal surfaces. CAPSUR is formulated to remove PCBs from concrete, asphalt, painted and metal surfaces. CAPSUR has demonstrated extraction efficiencies greater than 95 percent. This efficiency rate translates into less work, less time, and less product usage than conventional PCB cleaning products. CAPSUR easily vacuums up from surfaces. Surfaces are lightly rinsed with water, which is also vacuumed off. Easier removal results in lower labor cost. PCB removed with

CAPSUR applied as a foam use dramatically less product than other PCB cleaning products, resulting in less hazardous material to dispose of after the extraction.

PRODUCT COVERAGE

Application coverage rate will vary with surface porosity and operator proficiency.

The following are average coverage rates: Porous Concrete = 125 sq. ft. per gallon

Asphalt = 150 sq. ft. per gallon, Metals = 200 sq. ft. per gallon.

Painted surfaces should be patch tested prior to application as paint softening or discoloration may occur. **CAPSUR is available in 5-and 55-gallon containers.**

Emergency information regarding ingestion, skin contact, eye contact or inhalation is included in the Material Safety Data Sheet (MSDS). If any of these emergencies occur, the

For additional product information, contact:

CAPSUR Benefits

- High extraction rate
- Lower labor cost
- 90% less waste disposal

INTEGRATED CHEMISTRIES, LLC

P.O. Box 10558

White Bear Lake, Minnesota 55110

Phone (651) 426-3224

Fax (651) 426-3114

Email: info@integratedchemistries.com

www.integratedchemistries.com



CAPSUR® MSDS

1. Supplier Information

Product Name CAPSUR®
Application PCB Extraction System
Supplier Integrated Chemistries, LLC
 PO Box 10558
 White Bear Lake, Minnesota 55110 USA
 651-426-3224

2. Composition/Information on Ingredients

<u>Name</u>	<u>EC no.</u>	<u>CAS no.</u>	<u>Content</u>	<u>Classification</u>
Aromatic hydrocarbon mixture	265-198-5	64742-94-5	40-50%	Xn: R65
Naphthalene	202-049-5	91-20-3	<3%	Xn: R22
Ethylene glycol monobutyl ether	203-905-0	111-76-2	<10%	Xi: R36/38
Cyclohexanol	230-630-6	108-93-0	<10%	Xi: R37/38
Monoethanolamine	285-483-3	141-43-5	<10%	Xi: R36/37/38

3. Hazards Identification

R65 Harmful, may cause lung damage if swallowed
R22 Harmful if swallowed
R36/38 Irritating to eyes and skin
R37/38 Irritating to respiratory system and skin
R36/37/38 Irritating to eyes, skin and respiratory system

4. First-Aid Measures

EYES: Immediately flush eyes with clear water for at least 15 minutes, occasionally lifting lower and upper lids. If irritation persists, seek medical attention.
SKIN: Wash with soap and water.
SWALLOWED: Avoid aspirating swallowed liquid into the lungs, which could cause lung injury
INHALED: If mist causes discomfort, leave area and move to fresh air.

5. Fire-Fighting Measures

Extinguishing media: CO2, Foam Dry chemical
Use self-contained breathing apparatus.
Cool and use caution when approaching fire-exposed containers.

6. Accidental Release Measures

Recover product for proper disposal.

7. Handling and Storage

Keep away from sources of heat

8. Exposure Controls/Personal Protection

No exposure limits have been established. Eye Protection and any chemically resistant gloves should be worn. Respiratory protection may be needed. Use a respirator with OV cartridges.

9. Physical and Chemical Properties

<u>Appearance:</u>	Fluorescent liquid	<u>Specific Gravity:</u>	0.97
<u>Color:</u>	Green	<u>Flash Point, C.:</u>	63
<u>Solubility in water:</u>	Insoluble	<u>pH, solution as supplied:</u>	11

10. Stability and Reactivity

Product is stable

Materials to avoid: Rubber, plastics, strong acids and strong oxidizing agents

11. Toxicological Information

Exposure limits have not been established, but product is not expected to be toxic. Naphthalene is a suspected carcinogen.

12. Ecological Information

This product may be harmful to aquatic life.

13. Disposal

Soak up any spills with inert absorbent for disposal.

Do not release any chemicals into sewers or waterways without government permission at all levels.

14. Transport

No restrictions

15. Regulatory Information

Labeling

None

Contains

Cleaning liquid

Risk Phrases

R65	Harmful, may cause lung damage if swallowed
R22	Harmful if swallowed

Safety Phrases

S62	If swallowed, do not induce vomiting, seek medical attention immediately and show this container or label
S2	Keep out of reach of children
S24/25	Avoid contact with skin and eyes
S37	Wear suitable gloves
S26	In case of eye contact, rinse immediately with plenty of water and seek medical advice
S15	Keep away from heat

16. Other Information

Emergency Telephone Contact Number:	CHEM-TEL, INC. Domestic: 800-255-3924 International: 813-248-0585
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Date: 01-01-13



PRODUCT DATA SHEET

Sikagard® -62

Protective coating with moderate chemical resistance

PRODUCT DESCRIPTION


Sikagard®-62 is a two-component, solvent-free, high build coloured protective coating based on epoxy resins. It produces a damp-proofing and vapour-proofing system. Cured Sikagard®-62 provides a hard, glossy coat with high resistance to abrasion and chemical attack.

USES

- As an abrasion-resistant universal coating material designed for normal to moderately aggressive chemical environments. Sikagard®-62 is suitable for use on concrete stone, cementitious mortars and screed, epoxy cements (EpoCem), asbestos cement, epoxy mortars, iron and steel
- As anti-corrosion coating in food-processing plants, sewage works, farms and agricultural enterprises, chemical and pharmaceutical plants, beverage industries and bottling plants.
- Also used as part of glass fibre-reinforcement self-supporting linings with crack-bridging properties on bund areas and storage tanks.

CHARACTERISTICS / ADVANTAGES

- Solvent free
- Excellent chemical resistance
- High abrasion resistance
- Protective and decorative
- Vapour proof
- Cures without shrinkage
- Safe to use in contact with foodstuff and potable water
- Excellent adhesion to most building materials
- Can be applied by brush and roller or airless spray
- Forms a smooth, even coating
- Protective lining

TESTS	APPROVAL / STANDARDS  approved to British Standards for Contact with Potable Water by WRAS.
PRODUCT DATA	<div data-bbox="264 422 641 764">FORM</div> <div data-bbox="641 422 1362 764"> COLOURS Light grey, light green and white. Other colour shades on request. Under sun radiation it may come to discolouration and colour deviation; this has no influence to the function of the coating. PACKAGING Part A: 3.75 kg containers Part B: 1.25 kg containers Part A+B: 5.0 kg ready to mix units </div>
STORAGE	STORAGE CONDITIONS / SHELF-LIFE 24 months from date of production if stored properly in undamaged and unopened original sealed packaging in cool dry conditions. Protect from direct sunlight and frost.
TECHNICAL DATA	CHEMICAL BASE Epoxy resin DENSITY Mixed resin : approx. 1.35 kg/litre (20°C, 50 % rh) VISCOSITY Comp. A : thixotropic Comp. B : approx. 1150 mPas (20°C, 50 % rh) VOC DATA VOC content (ready to use) not exceeding 200gm/litre [Type of regulate paint under the Air Pollution Control (volatile organic compounds).



**MECHANICAL /
PHYSICAL PROPERTIES**

TEMPERATURE RESISTANCE (WITHOUT CHEMICAL OR MECHANICAL ACTION)

Permanent maximum : dry 70°C
wet 60°C

THERMAL EXPANSION COEFFICIENT

Approx. 7.5×10^{-5} [$\alpha = \text{m/m/}^\circ\text{C}$] (temperature range: -20°C to +40°C)

COEFFICIENT OF THERMAL EXPANSION (-10°C to +40°C)

Approx. 7.5×10^{-5} mm/m/°C

WATER VAPOUR DIFFUSION COEFFICIENT ($\mu\text{H}_2\text{O}$)

Approx. 100,000

MECHANICAL STRENGTHS(7 days)

Tensile Strength : approx. 25MPa
Compressive strength : approx. 50MPa
Flexural tensile strength : approx. 50MPa
E-modulus (dynamic) : approx. $30\text{-}40 \cdot 10^3$ MPa

ADHESIVE STRENGTH

(According to DIN 53232)

Substrate :

Dry Concrete : approx. 3.4 MPa
Steel (sandblasted) : approx. 25 MPa

Minimum thickness of coating for effective anti-corrosion protection:
0.6 mm dft (at least 2 coats, on mineral substrates no pinholes of air bubbles).

ELONGATION AT BREAK

Approx. 2.7%

ABRASION (TABER ABRADER) (7 days)

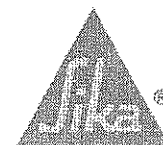
(According to ASTM D-1044)

Weight loss, 1,000 cycles
(H-22 wheel, 1,000 gm weight) 0.61gm



CHEMICAL RESISTANCE

Test Medium	Test Temp C°	1 day	7 days	30 days	60 days	180 days	360 days
Acetone	20°C	A	C	-	-	-	-
Acrylonitrile	20°C	A	A	A	A	A	A
Acetic ester (concentrated)	20°C	A	B	C	-	-	-
Acetic ester 20 %	20°C	A	A	A	A	AD	C
	40°C	A	A	A	AD	C	-
Ammoniac 10%	20°C	A	A	A	A	A	A
	40°C	A	A	A	A	A	AD
Caustic soda 30 % (NaOH)	20°C	A	A	A	A	A	A
	40°C	A	A	A	A	A	A
Cement water (saturated) (Ca(OH) ₂)	20°C	A	A	A	A	A	AD
	40°C	A	A	A	A	A	BD
Citric acid 20%	20°C	A	A	A	A	AD	AD
	40°C	A	A	A	AD	AD	AD
Detergents	20°C	A	A	A	A	A	A
	40°C	A	A	A	A	AD	AD
Distilled water	20°C	A	A	A	A	A	A
	40°C	A	A	A	A	A	AD
	60°C	A	A	A	BD	BD	BD
Ethanol	20°C	A	A	A	B	C	-
	40°C	A	B	C	-	-	-
Ethanol/water 60:40	20°C	A	A	A	A	A	A
Formic acid 10 %	20°C	A	A	A	A	A	B
Fuel oil (EMPA)	20°C	A	A	A	A	A	A
	40°C	A	A	A	A	A	A
	60°C	A	A	A	A	A	A
Hydraulic fluids (e.g. "Arcosafe", "Skydrol")	20°C	A	A	A	A	A	A
	40°C	A	A	A	A	B	C
Hydrochloric acid (saturated) (HCl)	20°C	A	AD	AD	AD	AD	AD
	40°C	AD	AD	AD	BD	C	-
Hydrogen peroxide 5% (H ₂ O ₂)	20°C	A	A	A	A	B	B
Iron-III-chloride solution (Fe Cl ₃) 35%	20°C	A	A	AD	AD	AD	AD
	40°C	A	A	AD	AD	AD	AD
Iron-II-sulphate solution (Fe Cl ₄) 35%	20°C	A	AD	AD	AD	AD	AD
	40°C	A	AD	AD	AD	AD	AD
Javelle water 14% (Cl ₂)	20°C	A	A	AD	BD	BD	C
Kerosene	20°C	A	A	A	A	A	A
	40°C	A	A	A	A	A	A



Lactic acid 20%	20°C	A	A	A	AD	BD	C
	40°C	A	A	AD	C	-	-
Liquid silage	20°C	A	A	A	AD	AD	AD
	40°C	A	A	AD	BD	BD	BD
Liquid manure	20°C	A	A	A	A	A	A
	40°C	A	A	A	AD	AD	AD
Methyl ethyl ketone MEK	20°C	A	C	-	-	-	-
Nitric acid 20% (HNO ₃)	20°C	AD	AD	AD	C	-	-
	40°C	AD	AD	C	-	-	-
Oxalic acid 10% (H ₂ C ₂ O ₄)	20°C	A	A	AD	AD	BD	C
	40°C	AD	AD	BD	C	-	-
Potassium permanganat 10% (KMnO ₄)	20°C	A	A	B	C	-	-
Phosphoric acid 40% (H ₃ PO ₄)	20°C	A	AD	AD	BD	BD	C
	40°C	AD	AD	BD	C	-	-
Red/white Wine	20°C	A	A	A	A	A	A
Sodium chloride solution (saturated) (NaCl)	20°C	A	A	A	A	A	A
	40°C	A	A	A	A	A	A
Soda solution (saturated) (Na ₂ CO ₃)	20°C	A	A	A	A	A	A
	40°C	A	A	A	A	A	A
Sulphuric acid 50% (H ₂ SO ₄)	20°C	AD	AD	AD	AD	AD	AD
	40°C	AD	AD	AD	AD	AD	AD
Sulphurous acid 5% (H ₂ SO ₃)	20°C	A	A	AD	AD	AD	BD
	40°C	A	AD	AD	AD	AD	BD
Styrene	20°C	A	A	A	A	A	B
Tataric acid 20%	20°C	A	A	A	A	A	A
Toluene	20°C	A	A	B	B	B	B
	40°C	A	A	B	B	B	C
Trichloroethylene	20°C	A	B	C	-	-	-
Water	20°C	A	A	A	A	A	A
	40°C	A	A	A	A	A	A
	60°C	A	A	A	B	B	B

For information about resistance to other media, please contact our Technical Services Department.

A= resistance to prolonged contact, B= temporarily resistant, C= break down of coating, D= resistant, but discoloration of coating.

SYSTEM INFORMATION

APPLICATION DETAILS

SYSTEM STRUCTURES

Roller coating:

Primer: 1 x Sikagard®-62

Coating: 2-3 x Sikagard®-62

Glass fabric reinforced system:

Primer: 1 x Sikagard®-62

Coating: 1 x Sikagard®-62 imbedding of glass fabric

2-3 x Sikagard®-62

CONSUMPTION / COVERAGE

Coating System	Product	Consumption
Roller coating		
Priming	Sikagard®-62	0.3 – 0.5 kg/m ²
Roller coating	Sikagard®-62	0.4- 1.0 kg/m ² , per coat, depending on substrate condition and coating thickness required
Glass fabric reinforced system		
Priming	Sikagard®-62	0.3 – 0.5 kg/m ²
1 st coat	Sikagard®-62	0.8 – 1.0 kg/m ²
Imbedding	Glass fabric	Approx. 0.3 kg/m ²
2 nd coat	Sikagard®-62	0.5 – 0.8 kg/m ²
3 rd coat	Sikagard®-62	0.3 – 0.5 kg/m ²

Note: For a theoretical dry film thickness of 100 microns (0.1 mm) approx. 0.14 kg/m². These figures are theoretical and do not include for any additional material required due to surface porosity, surface profile, variations in level or wastage etc.

SURFACE PREPARATION

The concrete substrate must be sound and of sufficient compressive strength (minimum 25 MPa) with a minimum pull off strength of 1.5 MPa. The substrate must be clean, dry and free from oil, grease, loose and friable particles. Very smooth surfaces, insufficient layers and oily contaminations must be removed mechanically (e.g. by blast cleaning or grinding). Then thoroughly cleaned to remove all dust. A sealer/levelling coat of Sikagard®-720 EpoCem or Sikafloor®-81/82 EpoCem should then be applied, after first making good any major surface defects. Steel and iron surfaces must be sandblasted (SA 2½).

Cementitious materials other than EpoCem should be at least 4 weeks old.

SUBSTRATE MOISTURE CONTENT

≤4% moisture content. Test method: Sika®-Tramex or CM.

No rising moisture according to ASTM (Polyethylene-sheet)

PREPARATION OF MATERIAL

Both components are packed separately. Prior to mixing, stir Part A mechanically and add entire contents to Component A, using a paintbrush or spatula to scrape out residue. Mix thoroughly with an electric stirrer at low speed (~ 300 rpm), taking care to entrain as little air as possible. Leave mixture to stand for approximately 3 minutes before applying.

APPLICATION INSTRUCTIONS

APPLICATION METHOD / TOOLS

Sikagard®-62 may be applied with a paintbrush, nylon roller, spatula or airless spray equipment.

SUBSTRATE TEMPERATURE

+8°C min (but at least 3°C above the dew point)
+30°C max.

AMBIENT TEMPERATURE

+8°C min (but at least 3°C above the dew point)
+30°C max.

RELATIVE AIR HUMIDITY

85% r.h. max. (incl. over night).

Beware of condensation !

POTLIFE

Max. open times

Temperatures	Time
+5°C	~90 minutes
+10°C	~30 minutes
+20°C	~20 minutes
+30°C	~10 minutes

WAITING TIME / OVERCOATING

Before applying Sikagard®-62 - on Sikagard®-62 allow:

Substrate temperature	Minimum	Maximum
+10°C	30 hours	3 days
+20°C	10 hours	2 days
+30°C	6 hours	1 day

Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.

Waiting time between coats should not exceed 48 hours. Otherwise surface must be ground before recoating.



CURING TIME

Temperature	Foot Traffic	Light Traffic	Full cure
+10°C.	~2 days	~5 days	~14 days
+20°C.	~1 days	~4 days	~10 days
+30°C.	~18 hours	~2 days	~5 days

Note: Times are approximate and will be affected by changing ambient conditions.

CLEANING OF TOOLS

Clean all tools and equipment immediately after use with Thinner C. Once hardened, the material can only be removed mechanically.

**NOTES ON APPLICATION /
LIMITATIONS**

Products in a liquid or uncured state may contaminate groundwater and should be prevented from entering drains of water courses.

Empty containers may contain hazardous residues. Product remnants should be removed and disposed of in accordance with local regulations.

Do not apply Sikagard®-62 to cementitious mortars that are modified with acrylic, acrylic co-polymer, EVA OR PVA polymer (e.g. SikaTops) because under certain environmental conditions hardened mortar or render may swell slightly and crack the rigid epoxy coating.

VALUE BASE

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.



**HEALTH AND SAFETY
INFORMATION**

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

FOR MORE PRODUCT NAME® INFORMATION:



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Product Data Sheet
Sikagard® -62
May. 2014, VERSION 6



Material Safety Data Sheet



1. Identification of the material and supplier

Names

Product name : Sikagard-62 Part A
ADG : Environmentally hazardous substance, liquid, n.o.s.

Supplier

Supplier/Manufacturer : Sika (NZ) Ltd.
PO Box 19 192
Avondale
Auckland 1746

85-91 Patiki Road
Avondale
Auckland 1026

www.sika.co.nz

Telephone no. : +64 9 820 2900

Fax no. : +64 9 828 4091

Emergency telephone number : 0800 734 607

Use of the substance/preparation : Chemical product for construction and industry

2. Hazards identification

Classification : Xi; R36/38 ERMA NZ Approval Code HSR002670
R43 HSNO Hazard Classification 6.4A, 6.3A, 6.5B, 9.1B
N; R51/53

Risk phrases : R36/38- Irritating to eyes and skin.
R43- May cause sensitisation by skin contact.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S24- Avoid contact with skin.
S37- Wear suitable gloves.
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

Statement of hazardous/dangerous nature : HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on ingredients

Mixture : Yes.

reaction product: bisphenol A-(epichlorhydrin) epoxy resin (number	25068-38-6	30 - <60
average molecular weight <= 700)		
oxirane, mono[(C12-14-alkyloxy)methyl]derivs	68609-97-2	1 - <10

Other ingredients, determined not to be hazardous according to NOHSC criteria, and not dangerous according to the ADG Code, make up the product concentration to 100%.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First-aid measures

First-aid measures

Inhalation : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4. First-aid measures

- Ingestion** : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Special protective equipment for fire-fighters** : In a fire or if heated, a pressure increase will occur and the container may burst. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
metal oxide/oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Hazchem code** : 3Z

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spill product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Refer to special instructions/safety data sheet. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

- Occupational exposure limits** : **No exposure standard allocated.**
- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Exposure controls**
- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

8 . Exposure controls/personal protection

- Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

- Physical state : Liquid. [Viscous mass.]
- Colour : Various.
- Odour : Characteristic.
- Density : 1.45 g/cm³ [20°C (68°F)]
- Flash point : Closed cup: >101°C (>213.8°F)
- Solubility : Insoluble in the following materials: cold water.

10 . Stability and reactivity

- Stability : The product is stable.
- Conditions to avoid : Avoid release to the environment. Refer to special instructions/safety data sheet.
- Materials to avoid : No specific data.
- Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Potential acute health effects

- Inhalation : No known significant effects or critical hazards.
- Ingestion : Irritating to mouth, throat and stomach.
- Skin contact : Irritating to skin. May cause sensitisation by skin contact.
- Eye contact : Irritating to eyes.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	LD50 Oral	Rat	17100 mg/kg	-

- Conclusion/Summary : Not available.

Potential chronic health effects

Chronic toxicity

- Conclusion/Summary : Not available.

Carcinogenicity

- Conclusion/Summary : Not available.

Mutagenicity

- Conclusion/Summary : Not available.

Teratogenicity

- Conclusion/Summary : Not available.

Reproductive toxicity

- Conclusion/Summary : Not available.

- Chronic effects : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

- Carcinogenicity : No known significant effects or critical hazards.

- Mutagenicity : No known significant effects or critical hazards.

- Teratogenicity : No known significant effects or critical hazards.

- Developmental effects : No known significant effects or critical hazards.

- Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Inhalation : No specific data.
- Ingestion : No specific data.

11 . Toxicological information

Skin	: Adverse symptoms may include the following: irritation redness
Eyes	: Adverse symptoms may include the following: irritation watering redness
Target organs	: Contains material which may cause damage to the following organs: lungs, upper respiratory tract, skin.

12 . Ecological information

Environmental effects	: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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Aquatic ecotoxicity

Conclusion/Summary	: Not available.
--------------------	------------------

Other ecological informationBiodegradability

Conclusion/Summary	: Not available.
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Other adverse effects	: No known significant effects or critical hazards.
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13 . Disposal considerations

Methods of disposal	: The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.
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14 . Transport informationADG

UN number	: UN3082
ADG Class	: 9
Packing group	: III
Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s.
Contains	: Epoxide resin
Label No.	: 9
Hazchem code	: 3Z

ADR

UN number	: UN3082
ADR Class	: 9
Classification code	: M6
Packing group	: III
Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s.
Contains	: Epoxide resin
Label No.	: 9

IMDG

UN number	: UN3082
IMDG Class	: 9
Packing group	: III
Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s.
Contains	: Epoxide resin

Sikagard-62 Part A

14 . Transport information

Emergency schedules (EmS) : F-A, S-F
Marine pollutant : No.
Label no. : 9

IATA

UN number : UN3082
IATA Class : 9
Packing group : III
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
Contains : Epoxide resin
Label no. : 9

15 . Regulatory information

Standard for the Uniform Scheduling of Drugs and Poisons

Not regulated.

Control of Scheduled Carcinogenic Substances

<u>Ingredient name</u>	<u>Schedule</u>
No listed substance	

Australia inventory (AICS) : All components are listed or exempted.
EU Classification : Xi; R36/38
R43
N; R51/53

16 . Other information

Person who prepared the MSDS : Validated by Hunter on 27.09.2010.

Date of previous issue : No previous validation.

☒ Indicates information that has changed from previously issued version.

Disclaimer

Material Safety Data Sheets are updated frequently. Please ensure that you have a current copy. MSDS may be obtained from the following website: www.sika.co.nz

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. All warranties are excluded. Our most current General Sales Conditions shall apply. Please consult the product data sheet prior to any use and processing.



Site Specific Health and Safety Plan

University of Cincinnati
Scioto Hall

Prepared by:

NorthStar Demolition and Abatement

December 8th, 2014



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SECTION 1 – INTRODUCTION

GENERAL

This Site Specific Health & Safety Plan (HASP) has been developed to provide safety requirements to be achieved by NorthStar Demolition and Remediation personnel and subcontractors while performing work related to the University of Cincinnati – Scioto Hall Project. This document identifies hazards and the corresponding safety procedures necessary to minimize injuries, property damage, and liability risks for NorthStar, subcontractors, and the site owner. This HASP is intended to meet the requirements of Federal, State and local regulations, and is designed to identify, evaluate and control health and safety hazards related to NorthStar employees. This HASP incorporates, by reference, the applicable OSHA requirements in 29CFR1926.

The requirements and guidelines in this HASP are based on a review of available information and evaluation of potential on-site hazards. The requirements of this HASP will be communicated to site personnel and will be available on-site for review.

PERSONNEL

This HASP is specifically intended for NorthStar personnel, subcontractors, and visitors who will be conducting activities within the scope of work in specified areas of the site. The persons listed below are responsible for complying with regulations, client policies, and this HASP applicable to the work they are performing. This HASP may be provided to interested parties for informational purposes; however, the HASP is specifically intended for conduct of activities within the scope of work for NorthStar.

Future actions that may be conducted at this site and unexpected conditions that may be encountered may necessitate the modification of this HASP. The site Health and Safety Officer will recommend modifications to the Regional Safety Manager. The regional safety manager will evaluate and make appropriate modifications to this plan. Modifications will be attached to this plan.

NorthStar Project Personnel

<i>Name</i>	<i>Title</i>	<i>Office phone</i>	<i>Cell Phone</i>
<i>Chris Hertzl</i>	<i>Branch Manager</i>	<i>(513)376-9858</i>	<i>(513)266-5777</i>
<i>JT Thompson</i>	<i>Operations Manager</i>	<i>(513)376-9858</i>	<i>(513)266-4838</i>
<i>John Ryan</i>	<i>Regional Safety Manager</i>	<i>(617)389-8880</i>	<i>(781)973-4029</i>
<i>Kevin Loughry</i>	<i>Branch Safety Officer</i>	<i>(513)376-9858</i>	<i>(330)714-1875</i>
<i>Orlando Martinez</i>	<i>Project Manager</i>	<i>(513)376-9858</i>	<i>(513)335-9326</i>



RESPONSIBILITIES

As directed in this HASP, safety related information would generally be addressed first by the site supervisor (SS) and health and safety officer (HSO). Accidents/emergency reports will be immediately reported to immediate supervisors who will report to Project Manager Orlando Martinez. Project Manager will immediately notify Branch Health & Safety Officer Kevin Loughry who will report to Branch Manager Chris Hertzl and Regional Safety Manager John Ryan. All incidents will be reviewed by Operations and Health & Safety Staff for review and resolution. Upon request, the General Contractor and/or Owner may be involved in the investigation and resolution process. Unresolved safety issues that require assistance from the general contractor/client/owner will be forwarded to the appropriate contact by NorthStar. In addition, the SS will maintain daily Toolbox Safety Logs that will periodically be reviewed by the HSO.

The Project Manager is responsible for providing upper level management support for health and safety. He will provide sufficient authority and resources to the Branch Health and Safety Officer and Site Supervisor to satisfy health and safety requirements.

The Branch Health and Safety officer is responsible for overall project safety and coordination of all required training. The HSO will conduct safety inspections and is also responsible for implementation of the HASP.

The Site Supervisor is responsible for overall project management and coordination of daily activities. The SS will coordinate all site activities with field personnel, subcontractors, equipment and materials suppliers, the engineer, and owner. The SS is also responsible for implementation of the HASP, implementing all H&S requirements and conducting daily safety briefings.

The Branch Health and Safety Officer, Project Manager and Supervisor have the authority to:

- **Direct NorthStar employees and their subcontractors to alter work practices that are deemed not sufficiently protective of human health or the environment.**
- **Suspend field activities or take other measures to reduce potential exposures if the environment and or the health and safety of any person appear to be endangered.**

However, the presence of the HSO and SS shall in no way relieve any person or organization of its obligation to comply with all applicable federal, state, local and University of Cincinnati safety requirements while on this project.

All Subcontractors to NorthStar are covered under this HASP or their own. This also is required for any contractor working within our area. They will need to designate their own



HSO and SS. These individuals will be required to be on-site at all times the subcontractor has employees performing work for NorthStar. This individual must also possess a sound working knowledge of pertinent OSHA regulations, this HASP, and other applicable Federal, State, and local Health and Safety requirements.

SECTION 2 - SCOPE OF WORK SUMMARY

BUILDING HISTORY

Scioto Hall is a concrete frame, 14 story dormitory (currently unoccupied), with mechanical penthouse, built in 1965.

SCOPE OF WORK

Demolition work to be performed generally encompasses the selective demolition/dismantlement of the exterior façade consisting of glass, porcelain enamel panels, brick and concrete block in preparation for the installation of new curtain wall system (by others). NorthStar will be removing existing interior walls and finishes. The concrete block and masonry brick will not be removed at the ground level and penthouse levels, but will be removed at the knee wall of the lounges/RFPA. Work includes the proper handling, removal, and on-site temporary storage of PCB and Asbestos containing caulk and contaminated building materials from selected areas. Contaminated building materials will be selectively demolished/dismantled/downsized, immediately wrapped in polyethylene sheeting, lowered to ground and placed into approved containers for waste hauling and disposal by the Environmental Services (under direct contract with the owner). Segregated masonry that is not in direct contact with impacted caulking will be disposed of as Construction and Demolition Debris in accordance with the Sustainable Design Requirements established for the Project.

Incidental work includes preparation of appropriate project pre-planning documents; protection of identified/adjacent University of Cincinnati Campus infrastructure scheduled to remain; debris segregation, downsizing, load out and removal operations; and other associated demolition and abatement specific work activities.

PROJECT PREPARATION

As part of NorthStar's strategic planning for project, we will conduct the following activities:

- Complete Engineering Survey per OSHA regulations (Safety Manager, Project Manager, Site Supervisor, and Branch Health and Safety Officer)
- Submit Asbestos Notification
- Obtain necessary permits



- Develop site specific fall plan and AHA/JSAs
- Develop site specific lead compliance program
- Develop comprehensive site specific HASP (Contained herein)
- Develop comprehensive deconstruction , asbestos, and PCB plans

MOBILIZATION

- Medical monitoring will be in compliance with 29 CFR 1926.1101 / 1926.62
- Personnel orientation and safety indoctrination.
- Identify all existing hazards
- Delivery and storage of equipment and supplies.
- Isolate work zone via barricades, signs, or tape.
- NorthStar will verify all utilities have been terminated i.e. electric, gas, etc.

SECTION 3 - STANDARD OPERATING PROCEDURES

This HASP has been developed in accordance with the requirements set forth in 29CFR1926 and the NorthStar Corporate Health and Safety Program. The purpose of this HASP is to assign site-specific responsibilities, site-specific training requirements, establish site-specific PPE, and to provide guidance for site-specific contingencies that may arise for NorthStar and subcontractor employees. In addition to this site-specific HASP, a copy of the NorthStar corporate H&S Program will be kept on-site for reference purposes. All NorthStar personnel and subcontractor personnel must be familiar with this site specific HASP and the NorthStar H&S Program prior to participation in site activities. All personnel must read the site HASP and sign the Pre-work briefing document to acknowledge they have read and understand the requirements.

Standard operating procedures and safety guidelines for activities are found within the:

- NorthStar Corporate Health & Safety Program
- NorthStar Specific Work Plans

These documents provide guidance on all activities including personnel training, PPE, medical surveillance, air monitoring, respiratory protection, and site control.

In addition, the following safety considerations will be followed:

- Prior to commencing work each day, NorthStar HSO, PM or SS will conduct a daily huddle /AHA meeting with all workers.



- * NorthStar personnel and subcontractor personnel, and third party personnel will have attended the NorthStar safety orientation prior to work at the site.

SECTION 4 – HAZARD EVALUATION

OPERATIONAL HAZARDS

During the course of the planned abatement/ deconstruction activities, personnel will be subjected to a number of potential hazards. These hazards will be controlled through the identification, and evaluation of potential hazards, and adhering to administrative controls, engineering controls, personal protective equipment, and safe work practices. Potential hazards anticipated to be encountered during this project include:

- * Electrical
- * Falls
- * Heavy Equipment/ Crane
- * Fire
- * Air Contaminates (ACM, Pb, PCBs and Silica)
- * Material Handling
- * Noise
- * Cold / Heat

ELECTRICAL

Work tasks anticipated during this project may subject personnel to possible electrical shock/burn hazards. Injuries may result due to faulty/damaged equipment, inadequate equipment grounding/bonding, wet environments and unsafe acts committed by personnel using or working near energized electrical equipment. Adhering to the following provisions will mitigate potential hazards associated with electrical equipment.

Prior to the commencement of abatement/deconstruction activities, NorthStar will verify that all existing electrical power to the building has been cut and air gapped. All visible hazards such as overhead, aboveground and underground utilities shall be identified. Site drawings shall be used for verification of electrical utilities. The elevators shall be decommissioned by others.

NorthStar will employ a licensed electrician to install a temporary electrical service for use during deconstruction.

NorthStar will comply with 1926 Subparts K / V and NFPA 70.

All electrically powered tools and equipment used on this project shall be inspected prior to each use, maintained to be safe, and adequate for the designated use.

All drills, saws, grinders, and such shall be double insulated and UL approved, or provided with a ground prong on the male plug. All temporary 120/125 volt, single-



phase, 15 and 20-ampere receptacles and cord sets shall be protected by approved ground fault circuit interrupters (GFCI's). Additionally, all electrically powered hand tools and cord sets must be inspected daily and tested regularly. This will be documented during the daily site safety inspection that is conducted by the HSO.

Grounding and bonding techniques are necessary to prevent the build-up of electrical potentials, which upon discharge could become a source of ignition/explosion. Therefore, grounding/bonding shall be utilized during fuel transfer activities from containers into equipment fuel tanks.

Work activities to be conducted on this project may require the implementation of hazardous energy control measures (lockout/tag out). These measures would be utilized to protect against the unexpected release of hazardous energy.

FALL HAZARDS

It is anticipated that hazards such as slips, trips, and falls will be encountered during the course of the project. Slip and trip hazards may be encountered due to demolition debris, and wet surfaces. Falls may be encountered during tasks performed using ladders, man lifts, and scaffolding to access elevated surfaces or work areas. Project workers will follow NorthStar Safety Program Procedures, "Fall Protection" and the Site Specific Fall Plan.

- Slip and trip hazards will be controlled by enforcing good housekeeping practices in the work areas, and material/equipment storage areas. All walking surface are kept dry and free of ice.
- All holes greater than 2 inch in size will be covered with 1 inch plywood secured and marked "Hole".
- All scaffolding will be in full compliance with 29CFR1926.450. And inspected daily by the competent person.
- Fall protection equipment shall be worn when working on scaffold.
- Guard rails will be installed around all leading edges and uncovered openings.
- Horizontal lifelines must be designed and engineered by a Qualified Person.
- Full compliance with the site specific fall plan shall be followed.

HEAVY EQUIPMENT

Based on the tasks required for the deconstruction, it is anticipated that Skid Steers, Scissor Lifts, Loader, Boom Lifts and a Brokk shall be employed. NorthStar employees



shall follow the NorthStar H&S Program when working around heavy equipment (summarized below):

- Certified/Trained Operators are the only employees permitted to run any piece of equipment.
- All equipment shall be inspected prior to operation.
- All workers will be required to wear reflective clothing when working around equipment.
- Each person approaching active heavy equipment must be sure to make visual eye contact with the operator prior to approaching the cab.
- Employees shall never walk behind the equipment or position themselves in "blind spots" of the operator.

FIRES/EXPLOSIONS

- Fire hazards are not expected during the course of abatement/deconstruction activities.
- Fire protection shall be provided to include 10# ABC type portable fire extinguishers readily available to trained personnel on-site in accordance with OSHA 1926.151.
- Fire extinguishers will be located on each floor and at each stairway entrance.
- Fueling of equipment will be accomplished by scheduled deliveries.
- All fuel tanks will be grounded and a bonding cable will be used during fueling operations.
- All personnel will be familiar on how to summon for emergency assistance and the Emergency Action Plan Evacuation Areas.
- All flammable materials to be used on-site shall be transported and stored in UL listed approved containers.
- Suitable containers with lids shall be provided for collection of waste materials and trash.
- Combustible materials will be removed at regular intervals to avoid poor housekeeping conditions.



- * Flammable and combustible materials will be stored in proper cabinets away from sources of ignition in full compliance with local, federal, and site specific regulations.
- * Fire extinguisher equipment shall be inspected routinely to ensure it is properly charged and provided with a monthly inspection record.

CUTTING OR HEATING OF METALS

These requirements will protect the workplace, environment, and safety and health of personnel involved in specific hot work activities in accordance with 29 CFR 1926 Subpart J. The SS will be responsible for ensuring that personnel who perform cutting and other hot work are knowledgeable and follow the requirements contained within this program.

- * Valve protection caps will be in place and secured in a vertical position.
- * A suitable cylinder truck, chain, or other steadying device will be used to keep cylinders from being knocked over while in use or in storage.
- * The cylinder valve will be closed when work is finished, when cylinders are empty, and when cylinders are moved.
- * Oxygen and fuel gas cylinders will not be stored together when in use. They will be separated by a ½-hour fire rated wall or by a distance of 20 feet.
- * Cylinders will be kept away from hot work so that sparks, hot slab, or flame cannot reach them. If this is not possible, fire resistant shields will be provided for the cylinders.
- * Cylinders will not be placed where they can become part of an electric current.
- * Cylinders containing oxygen or acetylene or other fuel gas will not be taken into confined spaces.
- * Cylinders will not be used as rollers or supports.
- * Damaged or defective cylinders will not be used.
- * Before a regulator is connected to a cylinder, the cylinder valve will be opened slightly and closed immediately to clear dust or dirt that might otherwise enter the regulator.
- * The cylinder valve will be opened slowly to prevent damage to the regulator.
- * For quick closing, valves on fuel gas cylinders will not be opened more than 1½ turns.



- Before the regulator is removed, the cylinder valve will be closed and the gas released from the regulator.
- Fuel gas and oxygen hose will be easily distinguishable from each other.
- All hoses will be inspected by the employee prior to use. Defective hoses will be removed from service and tagged "Defective - Do Not Use."
- Oxygen and fuel gas regulators, including their related gauges, will be in proper working order while in use. Defective items will be removed from service and tagged "Defective - Do Not Use". **Flash Arresters Shall Be Used.**
- Cylinders, caps, valves, couplings, regulators, and hoses will be kept free from oil or greasy substances.
- Do not handle welding or cutting equipment with oily hands or gloves.
- A sufficient number of appropriate fire extinguishers will be available. The Hot Work Permit will specify extinguisher requirements.
- Openings in walls, floors, etc., within 35 feet of hot work will be covered to prevent sparks or hot slag from entering them.
- A Fire Watch will be present immediately prior to, during, and following hot work operations and engaged only in fire watch duties. The Fire Watch continues surveillance of the area for 30 minutes after hot work has stopped.

EXPOSURE TO AIR CONTAMINATES

It is anticipated that asbestos, lead, pcb's, and silica, may be generated during this project. However, the levels of total particulate in the breathing zone or potential emissions from the work zones are not anticipated to be at levels of concern to human health and/or the environment.

NorthStar will conduct an exposure assessment per work task to determine proper level of PPE. This can be done evaluating on historical data from projects similar in size and scope of work completed within last 12 months period. NorthStar will conduct personal air sampling for asbestos, lead, pcb's, silica.

All air sample results will be reviewed with NorthStar personnel on site. In the unforeseen event that air samples are above the OSHA PEL the operation shall cease and the NorthStar SS and HSO will evaluate the operation and implement engineering controls to ensure all operations will be below the applicable PEL.

- Personal exposure monitoring will be conducted for all tasks shall be in compliance with 29 CFR 1926.



- All workers will comply with all PPE requirements and decontamination procedures. No one is allowed into the work areas without the proper PPE as outlined in section 5 of this HASP.
- Asbestos air monitoring shall be conducted and analyzed utilizing the NIOSH 7400 Revision 3, Issue 2.
- Lead air monitoring shall be conducted and analyzed utilizing the NIOSH 7300 method.
- PCB air monitoring shall be conducted and analyzed utilizing the NIOSH 5503 method.
- Silica air monitoring shall be conducted and analyzed utilizing the NIOSH 7500 Method.

MATERIAL HANDLING

Material handling equipment will be required for completion of this project. Hazards presented to workers during material handling tasks include shifting, sliding, and falling of stored materials and equipment, or loads. Potential injuries and accidents resulting from these activities will be minimized by adhering to applicable provisions within 29 CFR 1926.250, and the following requirements:

- Worker hazard awareness will be promoted during daily huddle and task specific safety briefings.
- All stored materials will be stacked, racked, blocked, or interlocked to prevent sliding, falling, or collapse.
- Maximum safe loads will not be exceeded (equipment load capacities). Safe load limits shall be posted on the equipment. (100psf each floor)
- Storage areas will be kept in good repair, and aisles and passageways shall be kept clear to provide free and safe movement of personnel and material handling equipment.
- Materials handled/used on scaffolds or other elevated surfaces will be limited to those required for immediate operations.

NOISE

Anticipated work activities on-site will routinely involve the use of heavy equipment (i.e., Skid Steers, Scissor Lifts, Loader, Boom Lifts and a Brokk.), which may present a noise hazard exposure to workers. NorthStar has conducted noise exposure monitoring and evaluations during performance of other similar projects. The information obtained during these evaluations will be utilized to establish hearing protection requirements for



equipment operators and other affected personnel. Safeguarding personnel from potential injury due to noise exposure will be implemented by the HSO in the following manner:

- Personnel subjected to excessive noise shall be trained in the hazards associated with acute and chronic noise exposures;
- Personnel when exposed to excessive noise shall use suitable hearing protection devices;
- Whenever possible, removal or reduction of noise hazards will be accomplished through the implementation of administrative and engineering controls.

COLD / HEAT

Weather conditions prevalent for the scheduled abatement / demolition activities are conducive to producing heat stress (summer months) and/or cold stress (winter months). Temperatures can vary extensively on a daily basis especially during seasonal changes. The use of varying levels of personal protective equipment can also contribute to potential heat stress.

The HSO will implement the following provisions during weather conditions or work tasks that subject personnel to a potential heat/cold stress hazards (Heat Stress - greater than 70°F, Cold Stress - less than 40°F):

- Promote worker hazard awareness through daily or task specific AHAs and during weekly toolbox safety meeting discussions;
- Monitor fluid intakes, and fatigue during heat stress hazards, and conduct monitoring of frostbite and cold stress symptoms during cold stress hazard operations; and
- During periods of potential cold stress, personnel will be advised to wear loose, layered clothing, and suitable foot, hand, face, and ear protection.

SECTION 5 – SITE CONTROL AND SAFETY PROCEDURES

The elements of site control include restricting access to the site to persons trained in safety procedures, the "buddy system", site communication, and site security. Only personnel who understand this HASP and the potential on-site hazards will be allowed on-site.

Site control will be maintained by the SS. Work areas will be identified by temporary fencing, barricade tape, and postings.



The Site Supervisor/Branch Safety Officer and foremen will clearly layout and identify work areas in the field and will limit equipment, operations, and personnel in the areas defined above prior to initiation of site activities.

TRAINING / CERTIFICATION

All NorthStar employees assigned to this project have completed Respiratory Protection; Lead in Construction; PCB Awareness; NorthStar Site Orientation; and Hazardous Communication Training. Employees involved with asbestos abatement shall possess the required licenses and training certifications in accordance with 29 CFR 1926.1101. Workers will receive medical examinations and be fit tested in accordance with 29 CFR 1926.1101; 1926.62 & 1910.134.

Occupational exposure to PCB's and the unique hazards associated with this operation will be an ongoing topic in our daily huddle meetings throughout the course of this project.

The HSO is responsible for verifying that all workers have completed the required training before they are allowed on site. Copies of training records will be maintained on-site.

WORK ZONES

The purposes of the regulated zones are to maintain order in the work area and to minimize physical hazards to on-site personnel, visitors, and the public. NorthStar will establish the active work zone via barricades, tape, and/or other means. Work Zone Entry and Exit Logs are to be completed each time in access or egress is made.

DAILY HUDDLE

At the start of each workday, a daily huddle will be held with all NorthStar personnel and any other third party contractors working at the site. The work for the day will be outlined with applicable safety considerations. In addition, a safety topic will be discussed e.g., location of safety equipment, proper decontamination, emergency procedures, electrical hazards, etc..

PERSONAL PROTECTION

The level of PPE assigned to abatement/ deconstruction activity is based on available information on the estimation of exposure potential associated with the work task. The HSO and SS will determine the appropriate PPE for the tasks to be performed.

Anticipated Levels of Protection for Site Activities



- Deconstruction Phase: **Hard hat, half-face respirators with P100 filters (when required) safety shoes, eye protection, hearing protection and Kevlar gloves / sleeves.**
- Asbestos Removal: **Half face or full-face air-purifying respirators with P100 filters, disposable protective clothing two (Tyvek), hard hat, safety shoes, eye protection, hearing protection and Kevlar gloves / sleeves.**
- PCB Removal: **Half face or full-face air-purifying respirators with P100/OV filters, disposable protective clothing two (Tyvek), hard hat, safety shoes, eye protection, hearing protection and Kevlar gloves / sleeves.**

The SS will be responsible for enforcing the appropriate use of personal protective equipment (PPE) for all personnel during the course of work, through a program of regular site surveillance and progressive disciplinary policy. Task-specific PPE will be used in accordance with the written preliminary hazard analysis contained within this Plan.

This section provides employees with guidelines for personal protection from potentially harmful substances, physical hazards, or hazardous processes. As a minimum, OSHA 29 CFR 1926 Subpart C will be followed for personal protective equipment guidance. Personal protective equipment will be maintained and used in a safe manner, and inspected at the time of issuance and prior to use for verification of acceptable conditions. In addition the following requirements will apply:

EYE AND FACE PROTECTION

The use of approved protective eye equipment and face protection equipment will be required at all times. Protectors will meet the following minimum requirements:

- Meet requirements established in ANSI Z87.1-1968 (including prescription eyeglasses).
- Employees whose vision requires the use of corrective lenses in spectacles, will be protected with goggles, spectacles, face shield or other eye protection meeting the same requirements.
- Eye protection will be worn at all times.
- A face shield will be worn in addition to safety glasses during grinding, chipping, and other operations producing flying objects.



RESPIRATORY PROTECTION

PURPOSE

This program establishes uniform guidelines for complying with the requirements of the Occupational Safety and Health Administration's Respiratory Protection Standard, 29 CFR 1910.134 for the proper selection, use and care of respiratory protection equipment.

NorthStar employees and subcontractors of shall wear NIOSH approved 3M half-face/ full -face respirators when required.

SCOPE

This section applies to all NorthStar operations.

POLICY

Every consideration will be given to the use of effective engineering controls to eliminate or reduce exposure to respiratory hazards to the point where respirators are not required; however, when feasible engineering controls are not effective in controlling toxic substances, appropriate respiratory protective equipment and necessary medical examinations will be provided by the company at no charge to the employee.

These respiratory protective devices will be of the type approved by the National Institute for Occupational Safety and Health (NIOSH) or acceptable to the U.S. Department of Labor (OSHA) for the specific contaminant to which the employee is exposed.

Where respirators are required by a specific OSHA Standard, NorthStar shall select and provide, at no cost to the employee, the appropriate respirator and required medical examinations specified by the Standard.

Employees required to use respiratory protective devices will do so as a condition of employment. Employees who are required to use respirators will be properly fitted, appropriately tested, medically screened, and trained in their use.

CODES AND REGULATIONS

General applicability of Codes and Regulations to the extent that more explicit or more stringent requirements are written directly into this procedure, all applicable state and/or local codes and regulations have the same force and effect as if copied directly into this standard. A copy of these codes and regulations must be present at the jobsite.

Federal Regulations: Those standards governing the development of this program include but are not limited to the following:



- OSHA's Asbestos Standard - Construction Industry 1926.1101
- OSHA's Lead Standard - Construction Industry 1926.62
- OSHA's Respiratory Protection Standard 1910.134
- OSHA's Access to Employee Exposure and Medical Records Standard
- NIOSH Approvals for Respirators
- American National Standards Institute (ANSI)

DESIGNATION OF A SITE-SPECIFIC PROGRAM ADMINISTRATOR

A site-specific respirator Program Administrator must be designated by name at each jobsite. This will be an individual who is qualified by appropriate training and/or experience (that is commensurate with the complexity of the program) to administer the respiratory protection program and conduct the required evaluations of the program's effectiveness. The site-specific respirator program administrator will be Orlando Martinez.

In order to comply with OSHA's "competent person" requirements, the individual designated must have at least two qualifications. He or she, must have a good working knowledge of the respiratory protective equipment being used at the worksite and must have sufficient authority to promptly prevent and correct hazardous conditions at the site.

Posting

The name of the designated site-specific Program Administrator must be displayed in a prominent location at the jobsite.

Respiratory Protection Program

The site-specific Program Administrator will ensure the implementation of a written respiratory protection program with required worksite-specific procedures and elements for required respirator use.

- A. At any jobsite where the use respirators are necessary to protect the health of our workers, the Respiratory Protection Program which is located in Attachment F will include, at a minimum, the following elements:

- Procedures for selecting the respirators



- Medical evaluations of employees required to use respirators
- Fit-Testing procedures for tight-fitting respirators
- Procedures for proper use of respirators
- Procedures for inspecting and care of the respirators
- Training employees about respiratory hazards
- Training employees on the use and limitations of respirators
- Procedures for evaluating the Program

Program Evaluation

The site-specific Program Administrator will periodically assess the effectiveness of the respiratory protection program during all phases of operation in which respirators are being used. Frequent walk-through inspections during these activities will be conducted to monitor and document supervisor and worker compliance with the requirements of the program. In addition, this evaluation will include regularly consulting with employees who wear respirators concerning fit, comfort, and other factors. The general assessment of the overall Respiratory Protection Program will also include specific evaluations of respirator cleaning, inspection, maintenance, repair, storage, and use procedures to ensure that the desired results of these operations are consistently achieved.

Regional Program Administrator: John Ryan

The use of respiratory protection equipment on this project will be in accordance with 29 CFR 1910.134, "Respiratory Protection", and ANSI Z88.2, Corporate Safety Manual Section 7-1 Respiratory Protection Program. Respiratory-protection equipment along with feasible engineering practices will be used to maintain levels as low as reasonably achievable.

HEAD PROTECTION

- The use of approved hard hats will be required for protection workers from falling and flying objects. Hard hats will meet the requirements established in ANSI Z89.1-1969.
- Hard hats will be worn in such a manner that the hat brim is positioned in front at all times, except when fitted with a welding hood attachment.



- Helmets for the head protection of employees who risk exposure to high voltage electrical shock and burns will meet specifications contained in ANSI Z89.0-971.
- Hard hats will be worn at all times in a posted demolition area and/or when instructed by supervisory or safety personnel.
- Hard hats do not have to be worn in restrooms, lunchrooms, cabs of trucks, or when vision may be impaired for crane operators during a lift (but only if there are no hazards present to the operator).
- Hard hat colors will be determined prior to the start of the project.

FOOT PROTECTION

The use of ANSI Z41.1-1967 approved safety-toe and/or chemical resistant footwear will be worn when work operations present hazardous such as falling objects, pinch points, or material handling which may result in injury to the foot. Otherwise, demolition workers and persons in the demolition area must wear steel toed leather working boots, in good repair. Under no conditions will running shoes, tennis shoes, or sandals be worn.

HEARING PROTECTION

- Hear protective devices will be provided and worn whenever noise levels are equal to or greater than 85 decibels (DBA).
- Hearing protection requirements will be determined by the supervisor and by posting of signs and flagging at the work location.
- Foam-type earplugs will be used only for one shift or until they become soiled, whichever comes first.

BODY PROTECTION

Appropriate protective clothing and boots will be worn when working in operations that present chemical hazards, environmental hazards, or physical hazards such as hot surfaces, sharp edges, or abrasive materials. Kevlar sleeves / gloves shall be used at all times.

- The HSO according to the hazard/environment expected will select gloves, coveralls and where not specified, the following minimum protection will apply:



- Kevlar gloves and sleeves will be worn for protection from lacerations.
- Asbestos / PCB operations require Tyvek suits.
- Gloves will not be worn when there is a possibility of the glove being caught in machinery.
- Control of personal protective equipment:
 - Disposable PPE will be containerized as required.
 - Re-usable PPE will be stored in the dirty side of the decontamination trailer.

SHIRTS AND PANTS

Shirts with a minimum of 4" sleeves and full-length pants will be worn at all times.

HOUSEKEEPING

All areas around the facility shall be kept in a neat and orderly condition. NORTHSTAR shall provide a waste container for domestic waste. Good housekeeping is conducive toward a safe work environment.

No eating, drinking or other practices that can increase the probability of hand-to-mouth transfer and ingestion of contaminated or hazardous material will be allowed inside the defined work area. Eating and drinking is permissible only in designated areas such as site trailer if suitable and parking areas. Smoking will Not Be Allowed inside the site and will strictly enforced.

DISCIPLINARY POLICY

All NorthStar personnel and lower-tier subcontractor employees shall be subject to the following progressive disciplinary policy:

1. First Offense: Documented Verbal Warning or Suspension
2. Second Offense: Termination

DOCUMENTATION

The following documentation will be adhered to during all field activities:



Accident/Incident Report - An Accident/Incident Report Form must be completed by the SS when any one or more of the following occur as a result of an accident or incident; fatality, near misses disabling injury, occupational illness, and property damage, fire/explosion, chemical exposure or hazardous material spill or any OSHA reportable events.

Site Safety Training - The accident/incident will be reported by telephone or the fastest means possible to the TRC and HLR Project Safety Manager. The written report will be submitted within 24 hours of the incident.

Safety Log - A Safety Log containing the following information will be maintained: Safety Meetings-attendance and topics

In addition, all MSDS and the NorthStar HASP will be maintained on-site.

SAFETY EQUIPMENT

Basic emergency and first aid equipment will be available on the clean side of the decontamination unit and staged throughout the work area as needed.

Basic site safety equipment shall include communications equipment, fully stocked first aid kit, Emergency eyewash, fire extinguisher, and other related safety equipment.

Emergency procedures, phone numbers, addresses and evacuation routes will be conspicuously posted in highly visible area. All employed personnel will be familiar with location of written Emergency Procedures, Emergency Phone Numbers and evacuation routes and general assembly area in case of evacuation.

COMMUNICATIONS

Employees will be notified of emergencies by the site supervisor/lead persons. Job site radios will be used to aid in the communication process with NorthStar employees. After initial notification, employees will be directed to meet at the pre-designated safety zone. See attached Emergency Action Plan

VISITORS/SUBCONTRACTORS

All visitors entering the project will be required to comply with the provisions of this plan. Any visitor will be expected to comply with relevant requirements such as training, and respiratory protection (if applicable). Visitors will also be expected to sign in with the site Supervisor and provide their own personal protective equipment.

In the event that a visitor does not adhere to the provisions the HASP, he/she will be requested to leave the project site. All non – conformance incidents will be recorded in the site log.



SAFETY AUDITS

The HSO will conduct regular safety audits of field operations and subcontractor performance to review for compliance with health and safety policies and procedures.

SECTION 6 – MEDICAL MONITORING

MEDICAL SURVEILLANCE

All NorthStar personnel will be required to have passed a pre-assignment and/or periodic medical examination that is consistent with 29 CFR Part 1926.1101 and 1926.62. A release for work will be confirmed by the HSO before an employee can be assigned to site activities. No other medical monitoring will be performed. Additional medical testing may be required in consultation with the company physician if an overt exposure or accident occurs, or if other site conditions warrant further medical surveillance.

SECTION 7 – EMERGENCY RESPONSE PLAN

This emergency response section details actions to be taken in the event of site emergencies. The PM, HSO and SS is responsible for implementation of emergency response procedures.

NorthStar will follow instructions of the Messer Construction representative in charge of the project.

EMERGENCY PROCEDURES

In the event of an emergency or a situation that could evolve into an emergency, the site supervisor, will be in command of the evacuation process.

EMPLOYEE NOTIFICATION

Employees will be notified of emergencies by the site supervisor/lead persons. After initial notification, employees will be directed to meet at the pre-designated safety zone. See attached Emergency Action Plan

EXTERNAL NOTIFICATION

The preferred method for contacting local Emergency Response Assistance is a telephone land line. This will provide initial notification to Law Enforcement and the Fire Department agencies. The site supervisor has a phone on site.



EMERGENCY EVACUATION

After the site supervisor or HSO determines that the need for an emergency evacuation exists, the evacuation alarm (air horn) will be activated.

Lead Employees will assist in the orderly evacuation of employees from work areas when evacuation alarm is sounded and escort employees to the designated safety area.

The site supervisor will account for Employees at the designated safety area by reviewing the daily huddle sign in sheet or daily timesheet.

The site supervisor will then notify the responding emergency agency of any employees that are not accounted for.

Under no circumstances will employees re-enter the building to look for missing employees.

No NorthStar employees will re-enter the building without the permission of responding emergency personnel and the Project Manager or Site Safety Officer.

MEDICAL EMERGENCIES

All Medical Treatment provided by NorthStar will follow the Directives of the American Red Cross.

After a medical emergency has been identified, the site Supervisor and HSO will be notified immediately.

The severity of the medical emergency and level of action required will be determined by the on-site Supervisor.

All Medical Emergency Care Providers will be informed of site conditions and the use of proper PPE.

All injured or ill employees requiring emergency medical care for life/death medical emergencies will be transported by local Emergency Medical Services (EMS). All non-life/death medical emergencies will be managed by the trained First Aid site Supervisor or HSO following proper standards of care.

All Employees who are involved in an injury or accident shall be seen by the company medical clinic. The Emergency Response Plan is Located in Attachment A.

SPILL CONTROL PLAN

Should a spill of any type occur, the SS or HSO will report the spill immediately to the client and notify spill response personnel on-site personnel should immediately secure the area to prevent unauthorized entry into the spill area. The SS must evaluate the extent of the hazard and utilize engineering controls and proper safety equipment to contain the spill until response personnel are on-site. If the chemical spill may cause fire, explosion, death or serious injury, the SS or designee will evacuate the area and



report to the safe refuge area. Spill control kits will be provided and readily available at the site trailer to help control and in case of spill minimize-contain the spill at the source.

ACCIDENTS/INJURY/ILLNESS

Accident investigation forms and incident reports are to be completed for all injuries, accidents or illness. The Project Manager and HSO will be responsible for ensuring that any and all reports and investigations are completed properly as soon as feasible, but in any case no later than within 24 hours from incident occurrence. Employees will follow the procedures specified within the NorthStar Corporate Safety Program.



ATTACHMENT A



EMERGENCY RESPONSE PLAN

In the event of an emergency onsite, the Site Supervisor or Project Manager will immediately contact the Branch Health and Safety Officer Kevin Loughry.

An air horn shall be the signal initiated to inform all employees to report to the designated muster point. The muster point for Tornados will be the basement of Scioto Hall unless indicated that the secondary location will be used due to work being performed in the basement. The secondary location will be in the lower level of the parking garage. For all other Emergency situations, employees will meet at the Messer Construction job trailer. The site supervisor is knowledgeable in the emergency response plan and will review the plan during with NorthStar personnel during their initial orientation and then periodically during daily safety briefings.

The SS and lead men will verify all personnel are accounted for by conducting a headcount. The attendance will be referenced off the daily huddle sheet and/or the daily timesheet.

Under no circumstances shall a NorthStar employee re-enter the building to search for missing personnel.

In the event there is missing personnel the SS will communicate the names of the missing persons with the HSO who will then communicate with emergency responders the amount of missing personnel and the employees designated work area.

NorthStar will re-enter the work area when it is deemed safe by emergency personnel, Messer Construction personnel and Project Manager or Branch Health and Safety Officer.

Emergency Contacts:

Ambulance/Paramedics, Fire Department, Police: DIAL 911

Poison Control Center: (800)382-9097

Hospital: University Hospital, 234 Goodman St. Cincinnati, OH 45219

Non-Emergency Clinic: Doctors Urgent Care, 5920 Colerain Ave, Cincinnati, OH 45239

NorthStar Health & Safety Officer: Kevin Loughry (330)714-1875

Notes



mapquest

Trip to:

The University Hospital
234 Goodman St

Cincinnati, OH 45219

(513) 584-4501

0.76 miles / 2 minutes



2921 Scioto St, Cincinnati, OH 45219-1967

Download
Free App



1. Start out going **east** on **W University Ave** toward **Jefferson Ave.** [Map](#)

0.09 Mi

0.09 Mi Total



2. Turn **left** onto **Jefferson Ave.** [Map](#)

0.07 Mi

0.2 Mi Total



3. Turn **slight right** to stay on **Jefferson Ave.** [Map](#)

0.1 Mi

0.3 Mi Total



4. Turn **slight right** onto **Martin Luther King Dr W.** [Map](#)

0.4 Mi

0.7 Mi Total



5. Turn **left** onto **Highland Ave.** [Map](#)

0.1 Mi

0.8 Mi Total



6. Turn **left** onto **Goodman St.** [Map](#)

0.01 Mi

0.8 Mi Total



7. **234 GOODMAN ST** is on the right. [Map](#)

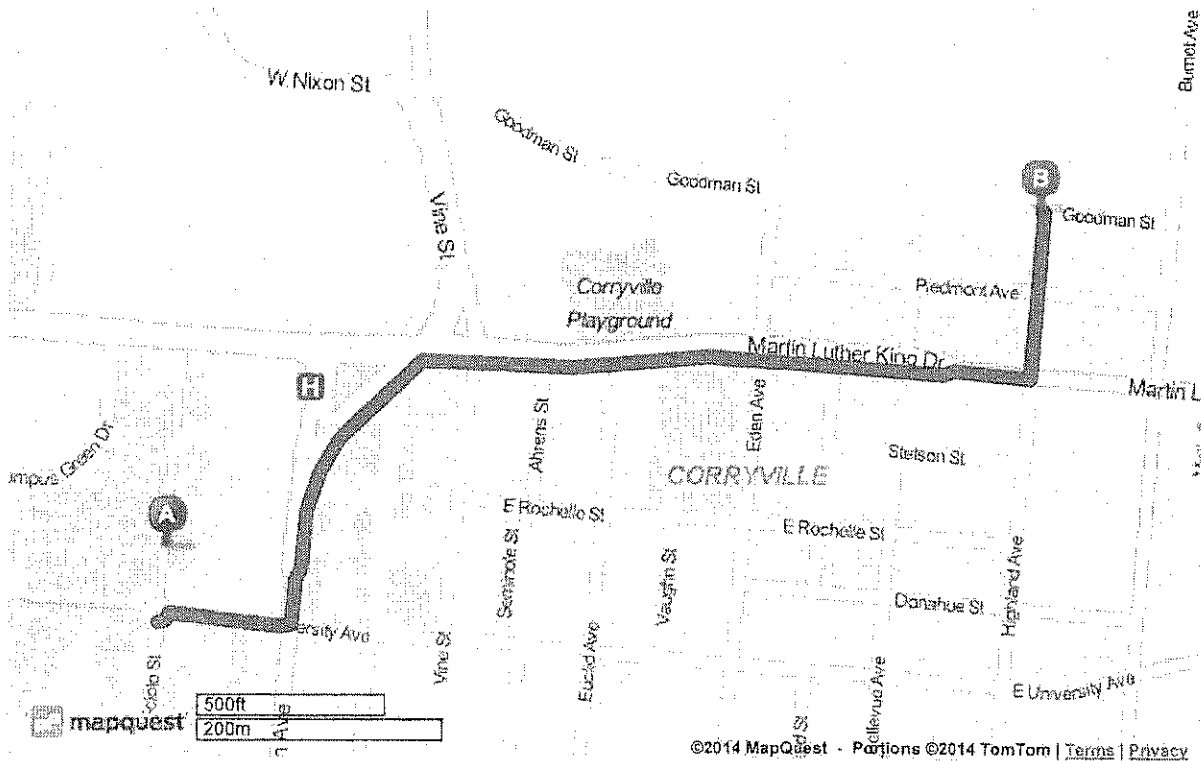


The University Hospital

234 Goodman St, Cincinnati, OH 45219

(513) 584-4501

Total Travel Estimate: 0.76 miles - about 2 minutes



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Trip to:

Doctors Urgent Care

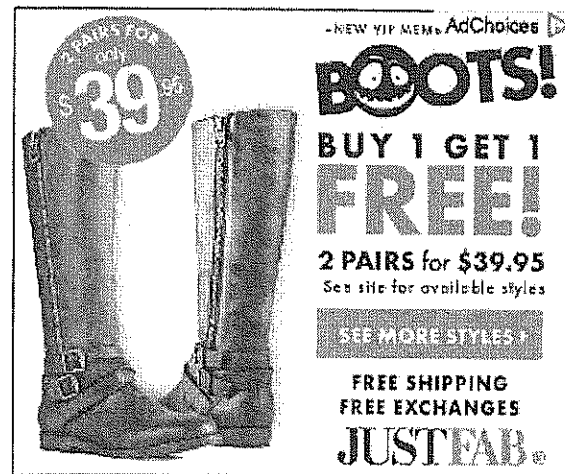
5920 Colerain Ave

Cincinnati, OH 45239

(513) 741-7044

7.19 miles / 13 minutes

Notes



2921 Scioto St, Cincinnati, OH 45219-1967

Download
Free App



1. Start out going **east** on **W University Ave** toward **Jefferson Ave**. [Map](#)

0.09 Mi

0.09 Mi Total



2. Turn **left** onto **Jefferson Ave**. [Map](#)

0.2 Mi

Jefferson Ave is just past W University Ave

Taza is on the corner

If you reach Glendora Ave you've gone a little too far

0.3 Mi Total



3. Turn **left** onto **Martin Luther King Dr W**. [Map](#)

1.5 Mi

1.8 Mi Total



4. Turn **right** onto **Central Pkwy / US-27 N / US-52 W / US-127 N**. Continue to follow **Central Pkwy / US-127 N**. [Map](#)

0.6 Mi

2.4 Mi Total



5. Merge onto **I-75 N / US-27 N / US-52 W** via the ramp on the **left** toward **Indianapolis**. [Map](#)

0.2 Mi

If you reach Clifton Hills Ave you've gone about 0.1 miles too far

2.6 Mi Total



6. Keep **right** to take **I-74 W / US-27 N / US-52 W** via **EXIT 4** toward **Indianapolis**. [Map](#)

0.9 Mi

3.5 Mi Total



7. Merge onto **US-27 N** via **EXIT 18** toward **US-27 N / Colerain Ave**. [Map](#)

3.7 Mi

7.2 Mi Total



8. **5920 COLERAIN AVE** is on the **right**. [Map](#)

Your destination is just past Kipling Ave

If you reach Loretta Dr you've gone about 0.1 miles too far

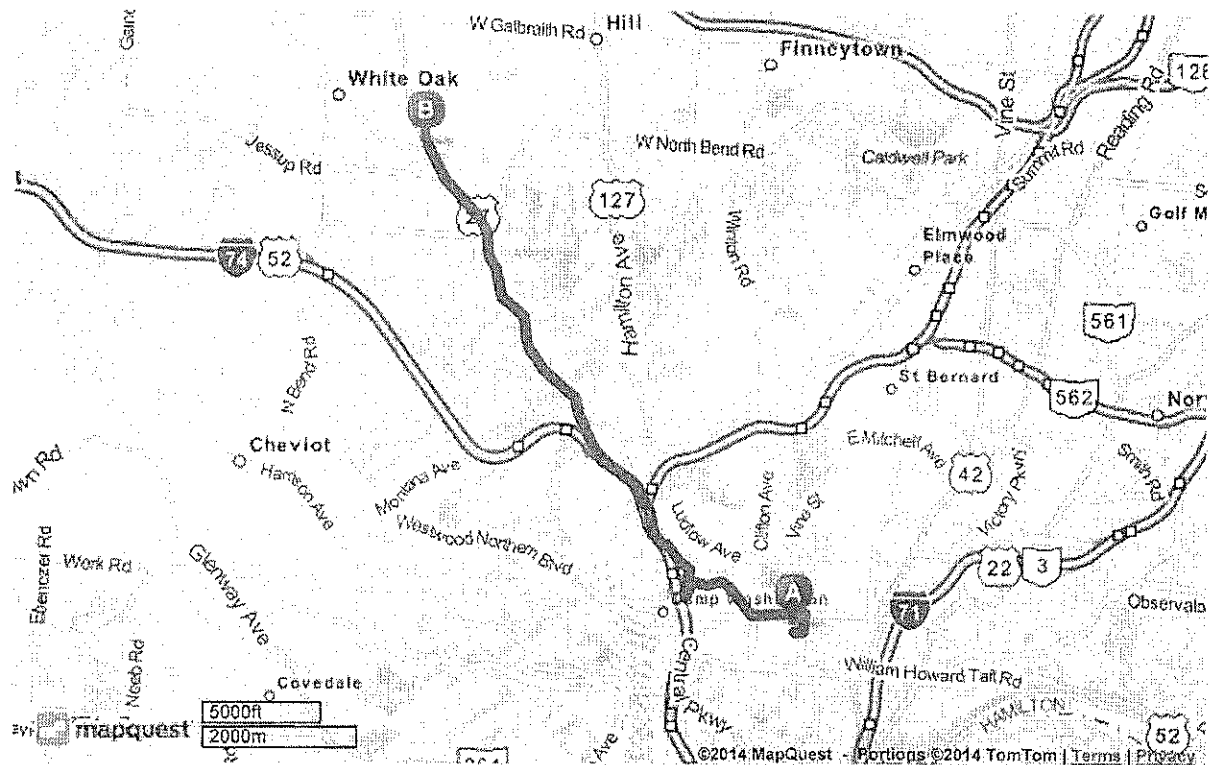


Doctors Urgent Care

5920 Colerain Ave, Cincinnati, OH 45239

(513) 741-7044

Total Travel Estimate: 7.19 miles - about 13 minutes



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